

NRCS Conservation Practice Standard: Code 595 ~ Pest Management

IPM Worksheet: Strawberry

Version: 6/06/08

Soil Nutrient Management and Cultural Practices

Cultural practices are of value in management of nutrients, weeds, diseases, or insects. The goal of a sound fertility program is to supply adequate nutrients with optimum timing for maximum economical crop yield, while avoiding excesses that can degrade water quality or adversely affect crop or soil quality.

1.	<i>Land that was planted to strawberries in the previous year, but where the planting was terminated, is now in a planned rotation out of strawberries for 1-5 years. (2 points per year.) 2-10 pts</i>	10	_____
2.	The crop rotation plan practiced includes at least one year of a non-solanaceous, non-rosaceous cash and/or cover crop.	2	_____
3.	Cover crops are used in the rotation plan and are selected for specific properties (e.g., marigolds for suppressing nematodes, sudangrass for suppressing weeds and/or adding organic matter).	2	_____
4.	Fields have been evaluated with an appropriate soil test for nutrient status and pH for the current year.	5	_____
5.	Fertilizer use is based on leaf tissue analysis and soil tests.	10	_____
6.	The planting pattern is in the form of a narrow matted or ribbon row in order to optimize air circulation. Thus, the canopy width when fully grown does not exceed 2 ft. and rows are spaced to allow for at least 2 ft. of open space between fully grown row canopies.	15	_____
7.	No plants reside in saturated soil or standing water during the season.	3	_____
8.	A weed-free biodegradable mulch layer is maintained within the row and between rows in bearing beds from early spring until renovation, to suppress weeds and prevent splashing of water from rain or irrigation. 10 pts	10	_____
9.	At bed renovation, leaves are mowed and incorporated into the soil to reduce disease inoculum.	5	_____
10.	Nitrogen application is primarily at renovation and in September in order to avoid excessive spring foliage growth which can increase disease development (esp. Botrytis Gray Mold).	5	_____
11.	Strawberries are mulched with weed-free, biodegradable mulch (e.g, straw) for winter protection.	10	_____
12.	A water use plan is used which minimizes disease development, optimizes water use efficiency, and minimizes erosion and run-off.	10	_____
<i>Total practice points for Soil Management & Cultural Practices</i>			_____
<i>Total possible points for Soil Management & Cultural Practices</i>			87

Pesticides Application and Records

Only pesticides approved and registered for strawberry in the state are used. Records of pesticide applications are maintained, including date, field and block, target pest, crop stage pesticide name and EPA number, formulation, rate and number of acres treated. Pesticide drift is minimized. Re-entry and pre-harvest intervals are adhered to. **Win-PST analysis is conducted for all pesticides considered for use on the farm.**

1. Only pesticides with a LOW or VERY LOW environmental hazard (Win-PST) are used all major pests (includes insects, diseases and weeds).	20	_____
OR		
Only pesticides with a LOW or VERY LOW environmental hazard (Win-PST) are used for at least one major pest.	10	_____
2. Insecticide/fungicide sprayer is calibrated before the start of the season.	10	_____
3. Herbicide sprayer is calibrated before the start of the season.	10	_____
4. Sprayers are recalibrated at least once during the season.	5	_____
<i>Total practice points for Pesticides Application and Records</i>		_____
<i>Total possible points for Pesticides Application and Records</i>		45

Disease Management

Diseases include: *anthracnose, black root rot, botrytis fruit rot (gray mold), leaf blight, leaf scorch, leafspot, leather rot, powdery mildew, red stele, verticillium wilt.*

1. Disease-free transplants are used.	5	_____
2. Disease problems are accurately identified and management strategies tailored to actual diseases present in the field in current season (i.e., not as prophylaxis unless history of the problem is well known).	10	_____
3. Detailed records (including maps, if appropriate) are kept to document field history of diseases, weather information, and management strategies used and the results. Varietal differences are noted.	2	_____
4. <i>Disease resistant cultivars are chosen, if appropriate, when planting new sites.</i>	5	_____
5. <i>Strawberry plantings are made on raised beds to optimize water and air drainage, where appropriate.</i>	5	_____
6. Fungicides are applied for gray mold (<i>Botrytis cinerea</i>) up to 3 times during bloom starting at 10% bloom, according to weather conditions and related disease pressure.	10	_____
7. If environmental conditions are not favorable for fruit rot development, fungicide is applied after bloom.	10	_____
8. Fungicides are chosen in combinations that discourage disease resistance development.	15	_____
<i>Total practice points for Disease Management</i>		_____
<i>Total possible points for Disease Management</i>		62

Insect Management

Insects and related pests include: aphids, bud weevil (clipper), cyclamen mite, garden slugs, leafrollers, root weevils, sap beetle, spittlebug, strawberry rootworm, potato leafhopper, tarnished plant bug, twospotted spider mite.

1. Insect problems are accurately identified and management strategies tailored to actual insect pests present in the field in current season.	10	_____
--	----	-------

2.	Detailed records (including maps, if appropriate) are kept to document field history of insect pests, management strategies used and the results. Note varietal differences. Scouting records are maintained from year to year.	5	_____
3.	Insecticides are not sprayed when bees are active during bloom.	5	_____
4.	Tarnished plant bug adults are monitored weekly using white sticky traps starting mid-April and continuing until 10% bloom.	5	_____
5.	Tarnished plant bug nymphs are monitored weekly using flower truss counts starting at 10% bloom and continuing until harvest begins. Control measures are not taken until the action threshold of either 0.25 nymphs per truss or 10% infested trusses is exceeded. 5 pts	15	_____
6.	Twospotted spider mites (TSSM) are monitored weekly until harvest (bimonthly after renovation) by systematically examining at least 50 mid-tier leaves and determining presence or absence of TSSM on those leaves.	10	_____
7.	Control measures for spider mites are not taken until: 25% of leaves sampled show presence of TSSM but no predator mites are found OR 30% of leaves sampled show presence of TSSM and some predators mites are found.	10	_____
8.	Twospotted spider mites are controlled using releases of predator mites. <i>Bonus practice</i>	10	_____
9.	Pesticides used for controlling other insects and diseases are selected to avoid those which are toxic to mite predators.	5	_____
10.	<i>Sprays are limited to border rows where possible. Bonus: points earned if at least one border spray is applied.</i>	5	_____
	<i>Total practice points for Insect Management</i>		_____
	<i>Total possible points for Insect Management</i>		75

Weed Management

Weeds include summer annuals and broadleaves, winter annuals and broadleaves and perennial annuals and broadleaves.

1.	A weed survey is conducted at least once per season with weed problems noted on field maps. Herbicide rate, selection and spot applications are based on the results of the weed survey.	15	_____
2.	Cultivation and hand weeding are used to control weeds.	10	_____
3.	Weed growth around the field border is controlled (e.g. by cultivation or mowing) to reduce weed seed movement into the field, improve air circulation and eliminate refuge for insect pests.	10	_____
4.	<i>Perennial weeds are eliminated the fall prior to planting, where possible.</i>	5	_____

Total practice points for Weed Management
Total possible points for Weed Management

35

Education

- 1. Manager attends one or more state/regional/national berry management workshops or conferences during the current year.
- 2. Manager has a current copy of Northeast Small Fruit Pest Management Guide.
- 3. Manager has current membership in New England Vegetable and Berry Growers Association.

5 _____
5 _____
5 _____

Total practice points for Education
Total possible points for Education

15

POINT SUMMARY

TOTAL POINTS

TOTAL POSSIBLE POINTS

Percentage

319
%